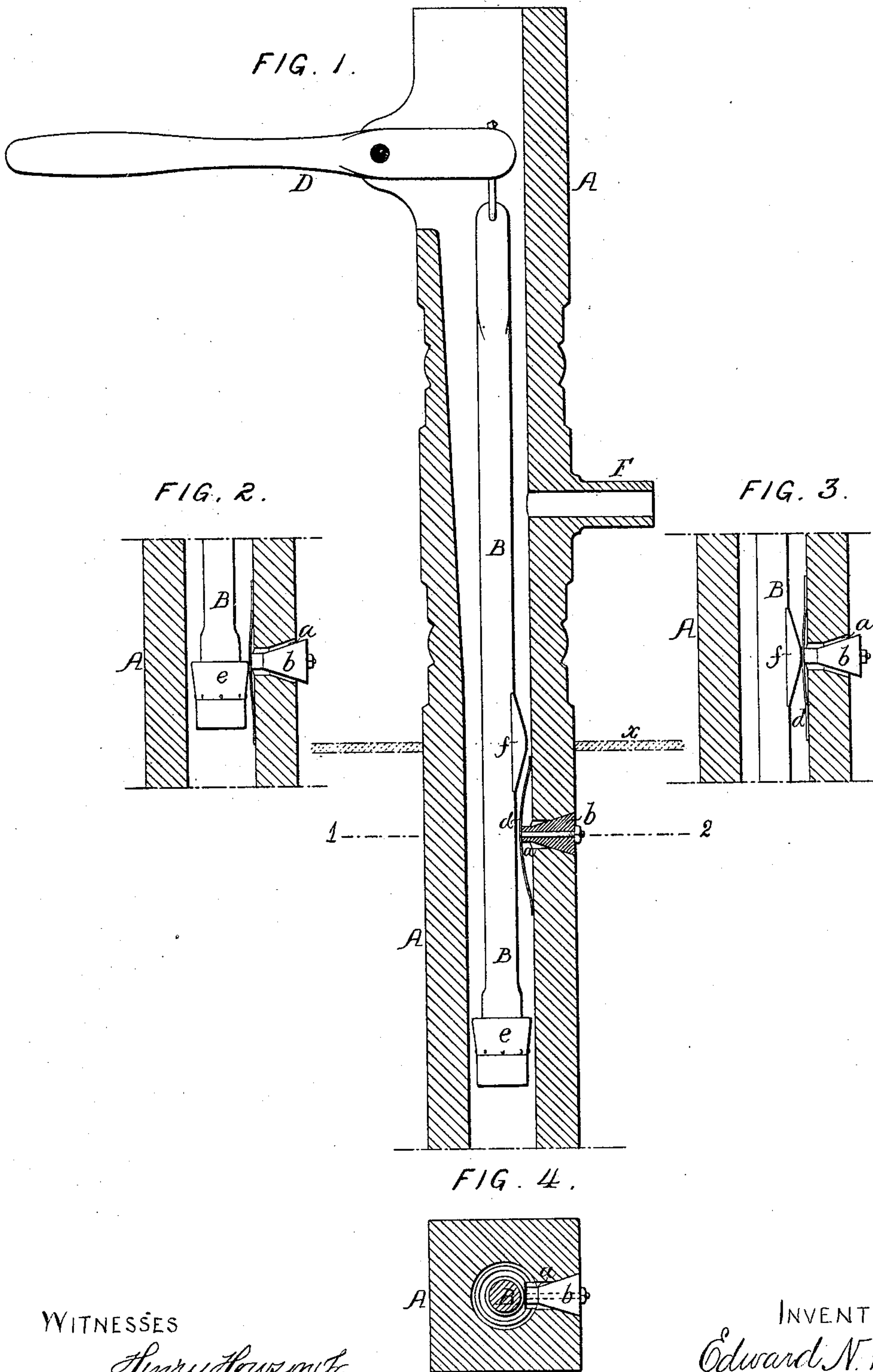


(No Model.)

E. N. WALLIS.  
Pump.

No. 231,124.

Patented Aug. 10, 1880.



WITNESSES

Henry Howson Jr.  
Henry L. Fulenwider.

INVENTOR.

Edward N. Wallis.  
by his Attorneys.  
Howson and Son



# UNITED STATES PATENT OFFICE.

EDWARD N. WALLIS, OF PHILADELPHIA, PENNSYLVANIA.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 231,124, dated August 10, 1880.

Application filed May 14, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD N. WALLIS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented an Improvement in Pumps, of which the following is a specification.

My invention relates to an improvement in the construction and operation of that class of valves which are used for draining the barrel of a pump after the pumping operation is completed, so as to prevent the freezing of a column of water in the pump-barrel and the consequent interference with the action of the pump.

The objects of my improvement are to prevent any interference with the free insertion and removal of the pump barrel and bucket, and to permit the operation of the valve either by the pump-bucket or by a projection on the pump-rod.

In the accompanying drawings, Figure 1 is a sectional view of a pump with my improvement; Figs. 2 and 3, detached views of parts of the same, showing the methods of operating the draining-valve; and Fig. 4, a sectional plan on the line 1 2, Fig. 1.

A is the barrel of the pump; B, the pump-rod; D, the operating handle or lever, and E the discharge-spout.

In one side of the pump-barrel is formed an opening, *a*, to which is adapted a plug-valve, *b*, the stem of which is secured to the center of an elliptical spring, *d*, located within the bore of the pump-barrel, and bearing at its opposite ends against said barrel, so that the tendency of the spring is to maintain the valve *b* in its seat and prevent the escape of water from the barrel of the pump through the opening *a*.

The lower end of the pump-rod B is provided with the usual bucket *e*, and on one side of the rod, at some distance above the bucket, is a projection, *f*, the latter being so arranged in respect to the bucket, and the spring *d* being so located in respect to both, that there can be a free movement of the rod B for pumping purposes without any contact of either the projection *f* or pump-bucket *e* with the spring *d*.

When the pumping operation is completed, however, and it is desired to drain the upper portion of the pump-barrel of the water remaining therein, the handle D is either depressed or elevated to its full extent.

When the handle is depressed the pump-rod is elevated, as shown in Fig. 2, and the

bucket *e* compresses the spring *d* and opens the valve *b*.

When the handle is elevated the descent of the pump-rod brings the projection *f* into contact with the spring *d* and opens the valve.

The opening *a* is located just below the cover *x* of the well or reservoir in connection with which the pump is used, so that the water escapes from the pump-barrel directly into said well or reservoir.

By the use of the elliptical spring *d*, connected at the center to the valve *b*, and bearing at both ends against the pump-barrel, the free passage of the bucket *e* past the spring in either direction is not interfered with, and the pump-rod and bucket can therefore be readily introduced into or removed from the pump-barrel when desired without previously detaching or compressing the spring *d*.

I claim as my invention—

1. The combination of the pump-barrel A, having an opening, *a*, the pump-rod B, carrying the bucket *e*, the valve *b*, adapted to close the opening *a*, and the elliptical spring *d*, connected in the center to the valve *b*, and bearing loosely at both ends against the interior of the pump-barrel, as set forth.

2. The combination of the pump-barrel A, having an opening, *a*, the pump-rod B, having a bucket, *e*, and projection *f*, the operating lever or handle D, the valve *b*, adapted to the opening *a*, and the elliptical spring *d*, connected to said valve and located between the bucket *e* and projection *f*, whereby said valve is opened by the bucket when the handle D is in one of its extreme positions and by the projection *f* when said handle is in the other extreme position, as set forth.

3. The combination of the pump-rod B, having a bucket, *e*, a pump barrel, A, having an opening, *a*, and a bore equal to the diameter of the bucket, the valve *b*, adapted to close the opening *a*, and the elliptical spring *d*, connected to the valve *b*, arranged within the pump-barrel, and bearing at its ends against the interior of the same, whereby the removal of the bucket is permitted, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

E. N. WALLIS.

Witnesses:

JAMES F. TOBIN,  
HARRY SMITH.